Disease: Q Fever (Query Fever)

*** This organism is a potential bioterrorist agent. See "Special Considerations for Bioterrorism" on page 3.**

Clinical Features: Onset may be sudden with chills, retrobulbar headache, weakness, malaise and severe sweats. There is considerable variation in severity and duration; infections may be unapparent or present as a nonspecific "fever of unknown origin". A pneumonitis is found on chest x-ray in some cases. Abnormal liver function tests are common. Acute and chronic granulomatous hepatitis and Chronic endocarditis have been reported. Case-fatality rate in untreated acute cases is usually <1% and is negligible in treated cases.

Organism: *Coxiella burnetii* is a rickettsial organism with two antigenic phases: phase I as found in nature and phase II after multiple laboratory passages in eggs or cell cultures. The organism has an unusual stability, can reach high concentrations in animal tissues, and is relatively resistant to many disinfectants. Sheep, cattle, goats, cats, dogs, feral rodents, birds and ticks are natural reservoirs.

Laboratory Test(s): Paired sera for demonstration of a fourfold rise in specific antibody. KDHEL does provide serological testing for Q Fever.

Treatment: For acute disease: Tetracyclines orally, 15-21 days.

Incubation Period: Usually 2-3 weeks.

Mode of Transmission: Commonly by airborne dissemination of rickettsiae in dust from premises contaminated by placental tissues, birth fluids and excreta of infected animals, in establishments processing infected animals and in necropsy rooms. Airborne particles containing organisms may be carried downwind for a considerable distance (one-half mile or more); also by direct contact with infected animals and other contaminated materials, such as wool, straw, fertilizer and the laundry of infected people. Direct transmission by blood or marrow transfusion has been reported.

Period of Communicability: Direct transmission from person to person occurs rarely, if ever.

Susceptibility: Susceptibility is general. Immunity following recovery from clinical illness is probably lifelong, with cell-mediated immunity lasting longer than humoral.

Occurrence: Reported from all continents.

Outbreaks: Outbreaks are generally of short duration; control measures are limited primarily to elimination of sources of infection, observation of exposed people and antibiotic therapy for those becoming ill.

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Surveillance Case Definition: A confirmed case must be clinically compatible and laboratory confirmed.

Clinical criteria: -A case with a clinical presentation sufficient to cause suspicion on the part of the evaluation physician.

Laboratory criteria: **-Fourfold or greater rise in specific antibodies between acute and convalescent phase sera by IF, microagglutination, CF or ELISA tests, or**

-Demonstration of Coxiellae in tissues by immunostains and EM.

Definition of a contact: Direct transmission from person to person occurs rarely, if ever.

Case Investigation: Search for history of contact with sheep, cattle or goats on farms or in research facilities, parturient cats, consumption of raw milk (although raw milk from infected cows contains organisms and may be responsible for some cases, this has not been proven), or direct or indirect association with a laboratory that handles *C. burnetii*.

Methods of Control: There is no commercially available vaccine currently in the US. At-risk industrial and research workers should be identified and enrolled in a medical surveillance and education program.

Isolation: N/A

Quarantine: N/A

Follow-up: N/A

Reporting Requirements:

1. Complete Kansas Notifiable Disease Form or enter into HAWK.

2. FAX form to: 1-877-427-7318, or

3. Mail form to: Epidemiologic Services Section - KDHE
   Landon State Office Building, Room 1051S
   900 SW Jackson Street
   Topeka, KS 66612-1290

For technical assistance questions, call 1-877-427-7317.

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Special Considerations for Bioterrorism:

Identification and Reporting:

The following contact numbers are staffed 24 hours a day, 365 days a year. Contact in order of priority as shown.

1. Kansas State Epidemiologist: 785-249-8903

2. KDHE Epidemiologist On-Call: 1-877-427-7317

3. CDC Bioterrorism response coordinator hotline: 404-639-0385

Likely Bioterrorist Scenarios:

It is the relative resistance to environmental conditions and remarkable infectivity of *C. burnetii* that make it a likely agent for a BT attack. However because Q Fever is usually a relatively benign and only a temporally incapacitating disease, it may not be useful as a vehicle for accomplishing a terrorist's agenda. The most likely scenario would be dissemination in an aerosol form upon a large gathering of people. Such an attack may or may not be announce by the perpetrator(s). It is very likely that public health and law enforcement authorities would not learn about such an attack until diagnosis of the first case (2-3 weeks later).

Safety Considerations for Public Health and Other Health Care Professionals:

Risks to public health, health care, or emergency response personnel should not be significant.

Event Response/Control Measures:

Whether a bioterrorist event is announced or unannounced, local public health officials should play a central role in the event response and in the determination of appropriate control measures.

Control measures which should be addressed are:

Decontamination: Not necessary in the case of *C. burnetii*.

Post-exposure prophylaxis: Not recommended for contacts. However if a known terrorist event as occurred all those exposed should be considered for treatment or monitored closely for institution of antibiotics upon onset of first symptoms.

Isolation: None

Quarantine: None

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Event Response/Control Measures (cont.):

Other public health activities:

Line lists: A central responsibility of the LHD staff is to maintain detailed line lists of cases, suspect cases, and contacts with accurate identifying and locating information as well as appropriate epidemiological information. These lists will be essential for early identification of infection among those exposed.

Pharmaceuticals:

In the event of a bioterrorist induced outbreak of Q Fever, appropriate pharmaceuticals will be procured from the CDC National Pharmaceutical Stockpile Program. Procurement, storage, and distribution will be coordinated through the Kansas Department of Health and Environment.

Use of pharmaceuticals: Local and state public health officials must play a central role in determining which public health workers, health care workers, law-enforcement workers, emergency workers, and other essential personnel should have priority in receipt of limited pharmaceuticals.